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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,625	06/12/2006	Chunguo Feng	034257R002	2786

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EXAMINER
BERTHEAUD, PETER JOHN

ART UNIT	PAPER NUMBER
3746	

MAIL DATE	DELIVERY MODE
03/17/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/582,625	FENG ET AL.	
	Examiner	Art Unit	
	PETER J. BERTHEAUD	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 November 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office action is in response to amendments filed 11/18/2008. It should be noted that claims 1, 2, and 4-8 have been amended and claim 3 has been cancelled.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 and 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoblitzelle 3,031,970 in view of Kottke 6,203,288.

Hoblitzelle discloses a reciprocating submersible pump apparatus, comprising a sieve tube (see extension of tube 11 with holes 38 above the top coil 23), a drive and a pump (32), the whole apparatus capable of being placed in an underground oil reservoir; wherein the drive consists of a stator (23) having an upper end and a lower end; characterized in that, with an airtight cavity, the upper end of the stator is connected to a lower end of the pump (see chamber 37) through the sieve tube (top end of 11); the pump is connected to an oil tube 52; the stator's lower end is connected to a balancing sieve tube 12, an end plug 14 and an end coupler 13 of the drive serially; wherein the circular inner surface of the stator is made from an alloy (see col. 2, lines 13-19); wherein there is a pump housing H outside a pump cylinder (37) of the pump, forming a circular space between them for sand residue; and a plunger push rod 31 of

the pump is connected to an upper end of a solid shaft of the reciprocating head (18) of the drive through the sieve tube; wherein the oil tube 52 leads to ground surface; and the stator (23) is connected to power terminals (see 82-85) of an overground numerical control unit (see 62). However, Hoblitzelle does not teach the following claimed limitations taught by Kottke.

Kottke teaches a reciprocating submersible pump apparatus, comprising a drive and a pump 13, the whole apparatus capable of being placed in an underground oil reservoir; wherein the drive consists of a stator 52 having an upper end and a lower end and a reciprocating head with iron cores 66 inside the stator 52; the stator and the reciprocating head form a friction couple via supporting guides 15 and the reciprocating head iron cores 66; wherein there are many circular iron core winding groups comprising circular iron cores 54 and circular windings 56 inside a stator frame 52 with the supporting guides 15 capable of being between winding groups (the guides 15 are above and below the winding group, so if there were a plurality, as seen in Hoblitzelle, they would be between); the circular iron cores 54 and the circular windings 56 are arranged next to each other; wherein the reciprocating head's iron cores 66 are circular and around a solid shaft 65 of the reciprocating head with permanent magnets 64 between the circular iron cores 66; wherein the permanent magnets 64 are equally spaced between the reciprocating head's circular iron cores 66; and the magnets 64 have smaller outside diameters than the circular iron cores 66; wherein the stator 52 is connected to power terminals of an overground numerical control unit (see 60 and col. 12, lines 57-67 - col. 13, lines 1-6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have modified the pump assembly of Hoblitzelle by implementing the stator and reciprocating head assembly, specifically the magnet and core arrangements, of Kottke in order to more precisely control the drive of the pump.

In reference to claim 5, Hoblitzelle in view of Kottke discloses the claimed invention except for the outer surfaces of the circular iron cores being made from an alloy. It would have been obvious to one of ordinary skill in the art to have the outer surfaces of the circular iron cores being made from an alloy in order to increase the lifetime of the pump by reducing wear. Furthermore, it is well known in the art to use alloys in applications where two elements are in frictional communication (see Hoblitzelle, an alloy is used to make to tube 11); thus making wear an issue. In addition, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice (see MPEP 2144.07 - Art Recognized Suitability for an Intended Purpose).

4. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoblitzelle 3,031,970 in view of Kottke 6,203,288, and in further view of Russell 4,687,054.

Hoblitzelle in view of Kottke discloses the invention as discussed above as well as the supporting guides being circular (see 15 in Kottke), made from alloy and have the circular inside surfaces made from alloy (tube 11, which is the guiding surface, made from alloy in Hoblitzelle; thus making this construction obvious); the supporting guides and have smaller inside diameters than the stator's innermost surface (taught by

Kottke). However, Hoblitzelle in view of Kottke does not teach the following claimed limitations taught by Russell.

Russell teaches a reciprocating pump apparatus comprising a drive and a pump (350), the whole apparatus capable of being placed in an underground oil reservoir; wherein the drive consists of a stator (see coil assemblies 240, 242, 244, and 246) having an upper end and a lower end and a reciprocating head (linear armature 300). Russell further teaches a seal bushing 222 on circular inside surfaces of circular iron cores (252, 254) and circular windings (240, 242, 244, and 246); this seal bushing 222 are connected to endcovers 212, 218; and all these form an airtight cavity.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have modified the pump assembly of Hoblitzelle in view of Kottke by implementing seal bushings onto the circular inside surfaces of the iron cores of the stator, as taught by Russell, in order to better seal the stator.

Response to Arguments

5. Applicant's arguments with respect to claims 1, 2, and 4-8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record in the attached form 892 and not relied upon is considered pertinent to applicant's disclosure.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PETER J. BERTHEAUD whose telephone number is (571)272-3476. The examiner can normally be reached on M-F 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Charles G Freay/
Primary Examiner, Art Unit 3746

PJB
/Peter J Bertheaud/
Examiner, Art Unit 3746